

# Product Description Document for Experimental Probabilistic Flood Outlook Summary

NWS WFO – Grand Forks, ND

January 2022

## Part 1 – Mission Connection

### 1. Product/Service Description:

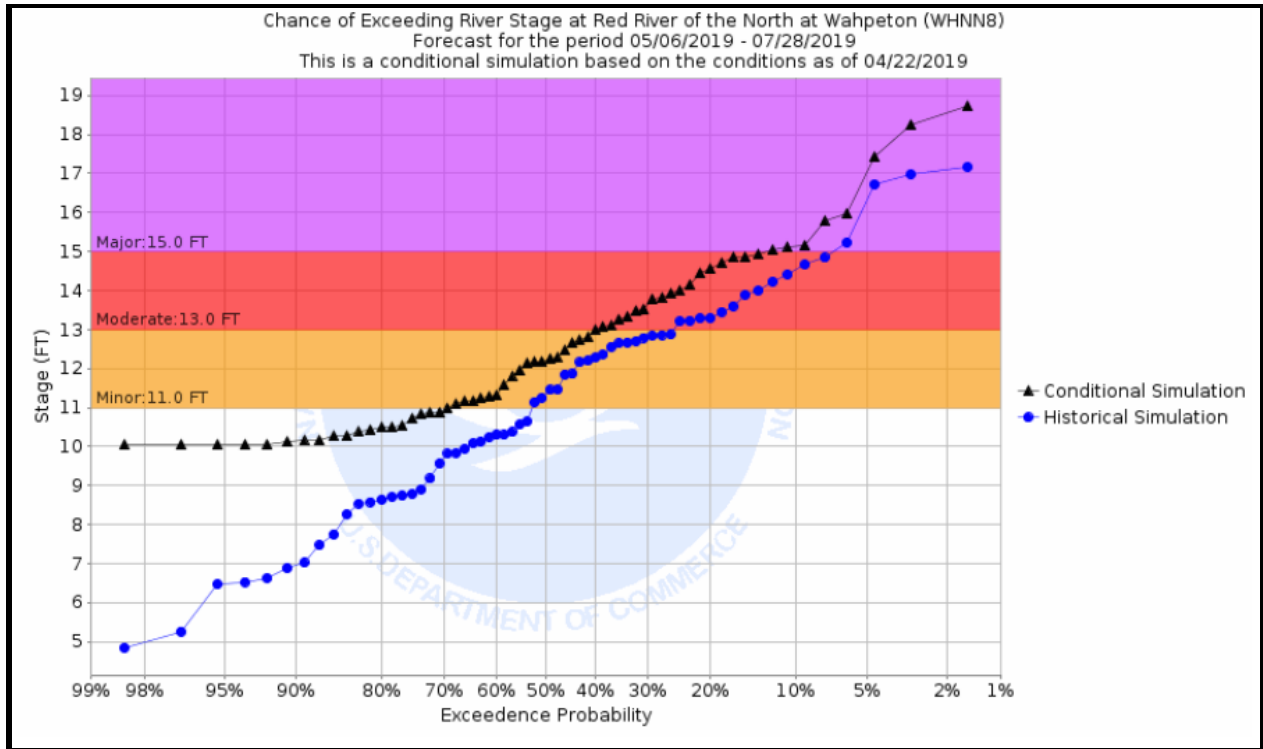
- a. The National Weather Service (NWS) Weather Forecast Office (WFO) Grand Forks, North Dakota will be extending the comment period for the Probabilistic Flood Outlook Summary (PFOS) as experimental through May 2022. This summary will include enhanced graphics that depict the probabilities of the mainstem forecast points along the Red River of the North and other nearby tributaries to reach certain river stages based on the standard probabilities of 95%, 90%, 75%, 50%, 25%, 10%, and 5%. Partners have expressed a desire for a better and more simple way to receive Advanced Hydrologic Prediction System (AHPS) Long Range Probabilistic Flood Outlook information. This product is intended to give users an overview of the flood risk during the spring snowmelt season. The information used in the PFOS graphics is the same information found in the Probabilistic Hydrologic Outlook (ESF) text product and in the “Chance of Exceeding” graphics. The PFOS was designed to help the end user more easily interpret the spring flood outlook for the Red River of the North and other tributaries serviced by WFO Grand Forks.

...Table 2--Exceedance Probabilities...							
Chance of Exceeding Stages at Specific Locations Valid Period: 05/06/2019 - 07/28/2019							
LOCATION	95%	90%	75%	50%	25%	10%	05%
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Red River of the North.....							
WAHPETON	10.0	10.1	10.8	12.2	14.0	15.1	17.1
HICKSON	20.3	20.3	20.5	23.9	30.7	33.4	35.3
FARGO	20.7	20.7	20.7	21.7	27.4	33.4	34.6
HALSTAD	19.1	19.1	19.1	19.8	25.6	34.2	37.6
GRAND FORKS	27.4	27.4	27.4	28.5	35.3	43.1	45.1
OSLO	29.9	29.9	29.9	30.1	33.7	36.5	37.1
DRAYTON	35.7	35.7	35.7	35.7	36.7	40.5	41.1
PEMBINA	47.0	47.0	47.0	47.0	47.1	48.4	49.4

**Figure 1: Excerpt from a Probabilistic Hydrologic Outlook.**

2. Purpose/Intended Use:

- a. This product is intended to give users an overview of the flood risk at the forecast points along the Red River of the North and nearby tributaries for the next 90 days during the spring snowmelt season.



**Figure 2: Example “Chance of Exceeding River Stage” graphic.**

3. Audience/Users:

- a. Users of this product are core partners within WFO Grand Forks’ Hydrologic Service Area, as well as the general public to some extent, working to assess local flood risk.

4. Presentation Format:

- a. The product will be in an image format available on WFO Grand Forks’ internet page.
- b. The units are in feet (river stage) and % (chance of reaching or exceeding a level). Valid times will cover a 90 day period from the time of the product issuance. An image of the PFOS graphic is included below (Fig. 3). The data will be optimized to fit on the graphic so the values can be read clearly.

5. Feedback Method:

NWS is seeking input on this experimental product which is proposed for operational implementation.

- a. Feedback via a user survey will be collected at:  
[https://www.surveymonkey.com/r/ExpProbFloodOutlookSummary\\_2022](https://www.surveymonkey.com/r/ExpProbFloodOutlookSummary_2022)
- b. Customers can also provide feedback directly to Amanda Lee, Service Hydrologist, through e-mail: [amanda.lee@noaa.gov](mailto:amanda.lee@noaa.gov).

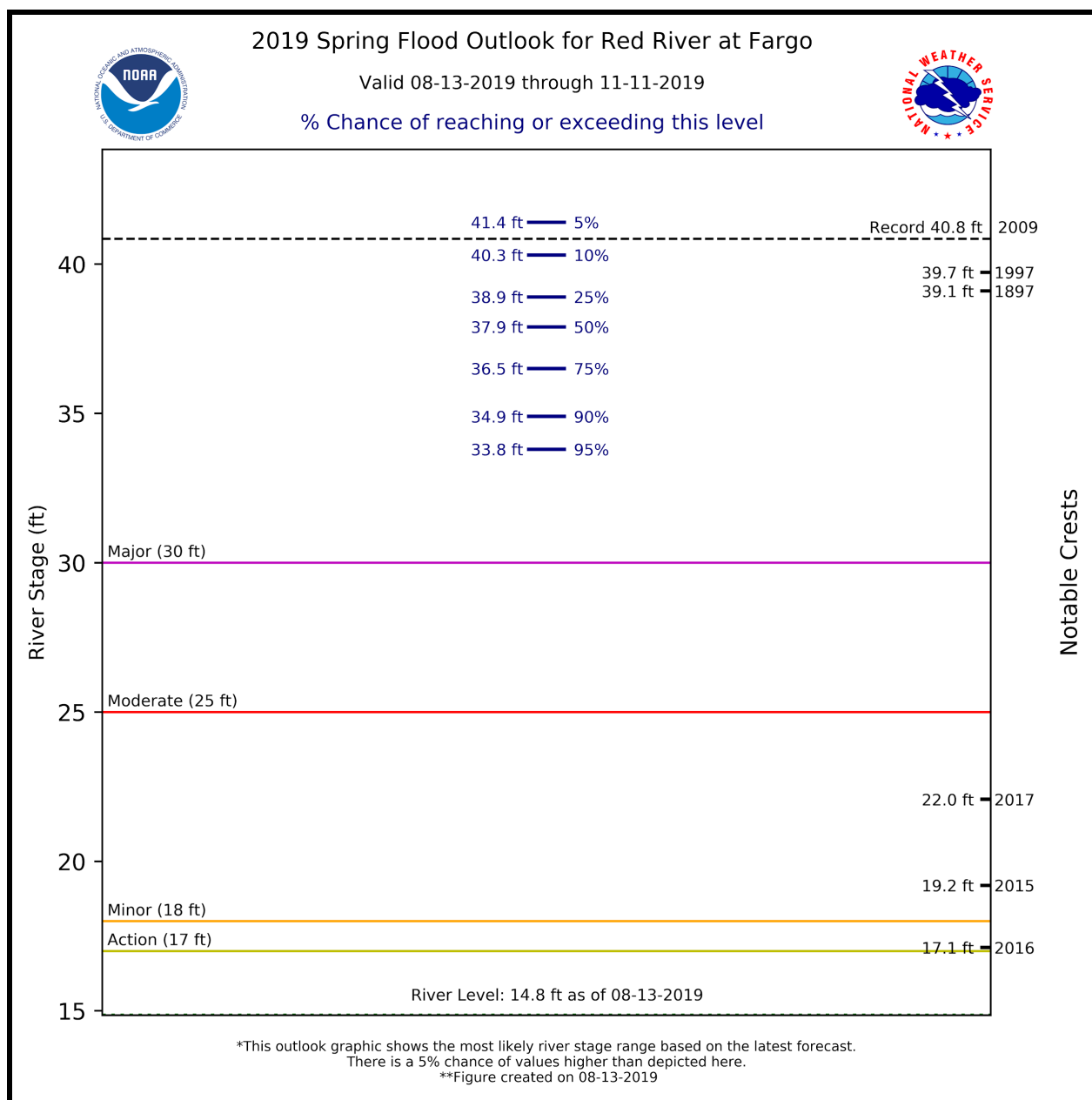
## Part 2 – Technical Description

### 1. Format and Science Basis

- a. The PFOS graphic depicts some or all the probabilities of reaching certain river stages based on the standard probabilities of 95%, 90%, 75%, 50%, 25%, 10%, and 5%. The data will be optimized to fit on the graphic so these values can be read clearly.
- b. The graphics will be created for the 8 mainstem river forecast locations along the Red River of the North and 26 tributary locations supported by WFO Grand Forks.

### 2. Availability

- a. This product will be available on the internet at WFO Grand Forks' website four times per year and coincide with the spring flood outlooks issued by the North Central River Forecast Center (Chanhassen, MN) and WFO Grand Forks. The approximate dates of the spring outlook are below:
  - Late January
  - Mid-February
  - Late February
  - Early March



**Figure 3: Example of the “Probabilistic Flood Outlook Summary (PFOS)” graphics.**